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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/651,070	08/30/2000	Scott Andrew Cummings	108339-09030	1144
32294	7590	06/30/2006		
SQUIRE, SANDERS & DEMPSEY L.L.P. 14TH FLOOR 8000 TOWERS CRESCENT TYSONS CORNER, VA 22182			EXAMINER BLOUNT, STEVEN	
			ART UNIT 2616	PAPER NUMBER

DATE MAILED: 06/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	<b>Application No.</b> 09/651,070	<b>Applicant(s)</b> CUMMINGS, SCOTT ANDREW	
	<b>Examiner</b> Steven Blount	<b>Art Unit</b> 2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 07 March 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1 - 39 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 9 - 13, 15 - 18, 21 - 28, and 33 - 39 is/are rejected.
- 7) ☒ Claim(s) 1 - 8, 14, 19 - 20, and 29 - 32 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

***Claim Rejections - 35 USC § 103***

1 The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1 – 8, 14 and 29 – 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. patent 6,798,743 to Ma et al in view of U.S. patent 6,532,554 to Kakadia .

With regard to claim 1, Ma et al teach MAC 702/704 and 810/820, CPU interface (col 4 lines 40+), upstream flow module 802/804 wherein the QOS is described in col 11 lines 43+; bridging and routing module 808, wherein wrapping occurs as described in col 14 lines 57+; Qos occurs in member 810; downstream flow module 810, wherein member 810 classifies the packets according to rules. Although a bus is not explicitly mentioned, the examiner believes that one of ordinary skill in the art would recognize the obviousness of using busses for members 701/720 of Ma et al. The examiner notes that no patentable weight has been given to the use of a cable modem, since although it is recited in the preamble, it is not referred to in the body of the claim.

Ma et al do not, however, teach a module that determines whether or not to wrap outgoing packets with control information.

Kakadia teaches routers with a TCP stack (commonly known as “TCP routers”) in figure 4. See also col 5 lines 25 – 35. It is noted that in the TCP layer, the router would “wrap” (ie, “encapsulate”) the packet with control data relating to the TCP protocol layer when

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communicating over a TCP channel. It is further noted that this would occur when the router determines that it is communicating with its paired member over a link that uses TCP. See col 5 lines 25 to col 6 lines 25 generally. Kakadia further teaches modeling communication interactions over a link and generating an alarm when deviations occur, and it would have been obvious to one of ordinary skill in the art at the time of the invention to have included such a model in Ma et al in light of these teachings in order to provide a stable communication platform. It would also have been further obvious to include a model for encapsulating TCP packets in Ma et al when the link occurs over this type of channel in light of Kakadia's teachings in order to provide for a channel that is reliable.

With regard to claim 2, scheduling occurs in the upstream flow module.

With regard to claim 3, these three functions occur in Ma et al.

With regard to claims 4 - 5, see discussion of QOS above.

With regard to claim 6, DOCSIS would be an obvious protocol to use.

With regard to claim 7, see memory 814.

With regard to claim 8, see interfaces 801 and 820.

With regard to claim 14, the examiner takes Official Notice that leaky bucket is a well known algorithm in the art.

With regard to claim 29, members 702/704 are a MAC equivalent, as are members 710/720; member 704 is a network functions module; QOS in the upstream flow module is discussed in col 11 lines 10+ and 43+; FIB 708 is an obvious equivalent of a bridging and routing module; flow management of the packet is discussed with respect to member 704; wrapping is discussed in col 14 lines 57+. Again, though a bus is not explicitly stated to carry the

data *to* and *from* the router, the examiner notes that the bus 15 in figure 4 would make this obvious.

With regard to claim 30, the QOS performs a rate shaping function.

With regard to claims 31 - 32, the examiner takes Official Notice that leaky bucket is a well known algorithm, and that priority encoding is a well known method for implementing this algorithm.

Claims 19 – 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. patent 6,798,743 to Ma et al as applied above to claims 1 – 8, 14 and 29 – 32, and further in view of U.S. patent 6,618,386 to Liu et al and U.S. patent 6,532,554 to Kakadia.

With regard to claim 19, Ma teaches flow module 702/704 (col 9 lines 58+), memory (access list verification) 706, router 708, and downstream flow module 710. Although busses are not explicitly stated to carry the data *to* and *from* the router, the examiner the examiner notes that the bus 15 in figure 4 would make this obvious.

Ma does not, however, teach a memory means for receiving a packet pointer for a packet selected from one of a plurality of sources, or a downstream flow module that determines whether to wrap packets with control information. The first is taught in Liu et al. See col 8 lines 25 – 35. The second is taught in Kakadia as discussed above.

It would have been obvious to one of ordinary skill in the art at the time of the invention to have used a packet pointer in Ma in light of the teachings of Liu et al in order to provide a network functions module which can operate with a smaller memory requirement.

With regard to claim 20, the communication chain shown between members 710 and 711 is linear.

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4. Claims 9 – 13, 15 – 18, 21 – 28, and 33 - 39 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten to include the limitations of the base claims and any intervening claims.

5. Applicants remarks have been considered, but are not persuasive.

The examiner submits that the identification of priority and determination of whether or not a packet is delay sensitive or not is part of the QOS act. See col 11, lines 10+. The examiner notes that there is no requirement that the “full” QOS act occur in the first module, as alleged by applicant in page 19, lines 13+ of the arguments.

Determination of whether to wrap the control information is discussed in col 5 lines 35+ of kakadia, and also in col 4 lines 25+.

With respect to the memory receiving a pointer, the examiner refers applicant to col 8 lines 25+ of Liu.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven Blount whose telephone number is 571 - 272 - 3071. The examiner can normally be reached on M-F 9:00 - 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ms. Doris To, can be reached on 571 – 272 - 3126. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



WELLINGTON CHIN  
SUPERVISORY PATENT EXAMINER

SB

  
6/18/06